AA0108699

AUTHORS: Shchukin, V. V.; Kerzhkovskiy, E. I.; Khirdzhiyev, S. G.; Baranov, L. F.

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19900443

USSR UDC 621.476.223.029.64.001.24

BARANOV, L. I., GAMANYUK, V. B., KLIMOV, B. N., USANOV, D. A.

"On Calculation of Microwave Semiconductor Waveguide Resonators"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 8, Aug 71, pp 1437-1441

Abstract: One type of waveguide modulator is a section of rectangular waveguide which contains a semiconductor diode in the form of a thin plate located in the center of the waveguide parallel to the narrow wall. Modulation is achieved by varying the conductivity of the base region of the diode. Theoretical and experimental data are compared and discrepancies are explained. It is concluded that the relationships derived in the paper can be used for the design of modulators based on laminar structures. The authors thank G. Ya. Nikushkin and S. N. Zorya for considerable assistance rendered during the calculations, as well as N. N. Khramov for participating in the experimental research.

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USSR

UDC 621.315.592:535.34

KUSTOV, YE.F., BARANOV, M.N.

"Absorption And Luminescence Spectra Of An Ion Of Neodymium In Single Crystals Of Calcium Scandate"

Tr. Mosk. energ. in-ta (Works Of The Moscow Power Institute), 1972, Issue 96, pp 97-100 (from RZh:Elektrotekhnika i energetika, No 6, June 1972, Abstract No 6B96)

Translation: The paper considers the absorption and luminescence spectra of a neodymium (Nd) ion in a single crystal of $CaSc_2O_4$ synthesized by the optical zone melting method. The concentration of Nd ions amounted to 3×10^{20} cm^{-3}. The absorption spectrum of the ion in a single crystal consists of a number of intense structural bands, and the luminescence spectrum of a number of closely located narrow lines. The most intense luminescent line has a wavelength of 1.0744 micron. The complexity of the absorption and luminescence spectra is accounted for by the low local symmetry of the crystalline field in which the Nd^{3+} ion is found, as well as the replacement by a Nd ion of the two-valence calcium ion. 4 ill. 2 ref. V.I. Telyatnikov.

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USSR

UDC 621.762.2(088.8)

PATYUKOV, G. M., ROMANOV, A. I., BARANOV, N. N., BUTORIN, N. I., KHROMENKO, G. S., GONCHAROV, M. T., and SAGUNOV, T. M., Noril'sk Mining and Metallurgical Combine imeni A. I. Zavenyagin

"Electrolyzer for Making Metal Powder"

USSR Authors' Certificate No 267080, Cl. 40c, 1/02; 40c, 5/00, (C 22d), filed 21 Feb 67, published 23 Jan 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract NO 3G405P)

Translation: The electrolyzer contains a bath, anodes, disk cathodes fastened on a shaft, current supply unit, and drive mechanism. In order to decrease power consumption and increase dependability of electrolyzer operation, the drive mechanism is supplied with a toothed rack, which engages with the gear that is fixed on the shaft with the cathodes and imparts to the cathodes a reciprocating motion along the path of a pendulum. The contact at the ppint of the current supply to the shaft by the cathodes is made to be fixed. One illustration.

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BARANOV, N. G.

mechanical engineering

DETERMINATION OF EQUIVALENT RANDOM PERTURBATION DURING MODELING OF COMPLEX DYNAMIC SYSTEMS

L. A. Manashkin and N. G. Baranov (Dnepropetrovsk)

Optimization of the parameters of damping devices requires that a model of the equipment be perturbed so that the damping devices operate under near normal conditions. This is done by feeding a voltage from a noise generator with a rather broad spectrum to a synthesizer. The signal formed by the synthesizer is fed to an electrical model. The output quantities of the model are formed so that they can be compared with the results of experimental studies from a (standard) actual device under actual conditions. The results of investigation of oscillations of the link of interest in the actual device are represented as the spectral characteristics of these oscillations. The electrical voltage produced in the model and corresponding to the oscillations of the unit being studied is sent to an analyzer. The results of analysis are compared with the fixed spectrum produced preliminarily during experimental studies of the oscillations of the actual equipment. By controlling the synthesizer, approximate correspondence of the spectra produced experimentally and by modelling can be achieved. The corresponding perturbation will be equivalent to actual perturbation from the standpoint of the operating conditions of the unit being studied.

A block diagram of the system as a whole, a block diagram of the synthesizer and of the analyzer are developed.

Vacuum Tubes

USSR UDC 621.385:537.525

AKSENOV, I. I., AMELIN, V. Z., BARANOV, N. G., SLATIN, V. I., SMIRNOV, S. A.

"Construction, Electrical, and Operating Characteristics of Heavy-Current Controlled Discharger"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. pribory (Electronic Technology. Scientific-Technical Collection. Gas-Discharge Devices), 1970, Issue 4(20), pp 67-71 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5A170)

Translation: A discharger is described which is intended for operation in circuits of capacitance storage elements and protective devices, with voltages from several hundred volts to 10 kv. The device can commutate currents in a pulse up to 100 ka and is characterized at the same time by a resource well in excess of 3.10^4 of the discharge. The construction of the discharger and the technology of its production are described and the electrical and operational characteristics presented.

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USSR UDC 620.17:669.71'5'721:620.176.251.1

BARANOV, N. S., KALININA, A. P., STEPANOV, G. A., and SHLYAMNEVA, I. A.

"Dependence of Mechanical Properties of Alloys in the System Al-Zn-Mg on Aging Modes"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1970, pp 32-34

Abstract: Results are presented from an investigation of the influence of heat treatment and preliminary natural aging modes before artificial aging on the mechanical properties of alloys in the Al-Zn-Mg system at 20° and -196°C. It is concluded that the heat treatment modes for alloys in the Al-Zn-Mg system which will be used at low temperatures can be selected so as to provide satisfactory properties at +20°C, since the properties at -196°C vary directly with the properties at +20°C. Artificial aging at 100°C for four hours followed by 7-9 hours at 150°C, with subsequent natural aging for 24 hours or more results in rather high strength properties and satisfactory plastic properties at -196°C.

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USSR

UDC 620.178.3.05

LITVAK, V. I., and BARANOV, N. V.

"Fatigue Crack Indicator"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 6, Jun 73, pp 751-753

Abstract: A device is described which signals the formation of fatigue cracks on samples undergoing fatigue testing. Of major importance are the sensors and the materials used for the sensor system. Good results were obtained using copper wires 0.1-0.12 in diameter coated with type PEV enamel insulation and fastened to the test parts with BF-2 or BF-4 mastic. The importance is stressed about knowing the location where maximum stresses will occur in the article being tested. This can be done by experimentation or calculation. By experimenting it is possible to use films of materials whose optical properties change under stress and by the use of lacquers which crack at the points of stress concentrators. A schematic diagram is contained in the article. 1 figure.

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USSR

KULIK, A. F., BARANOV, N. V., KHLOPOV, V. P., OBODZINSKIY, V. G.

"Automatic Device for Fatigue Testing of Aircraft Structures"

Otkrytiya Izobreteniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972, Patent No 359564.

Translation: 1. An automatic device for fatigue testing of aircraft structures, containing a programming device, controling the operation of the control device, actuating mechanisms loading the structure being tested, feedback sensors tracking the signal processing system, an emergency protection device, differing in that in order to increase the sensitivity and operational reliability, the control device consists of contact couples connected by a contact in the tracking system into circuits of switches which switch the actuating mechanism to loading or unloading.

2. A device according to Claim 1, differing in that in order to prevent nonfatigue rupture of the structure, the feedback sensors are installed at the test points and connected with the tracking system through the contacts of a switch.

3. A device according to Claim 1, differing in that in order to increase the upper limit of loading frequency of the structure, the hydraulic

USSR

KULIK, A. P., BARANOV, N. V., KHLOPOV, V. P., OBODZINSKIY, V. G., Otkrytiya - Izobreteniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972, Patent No 359564.

system includes a hydraulic accumulator and electrically controlled hydraulic distributors, connecting the accumulator to the actuating cavity of the force exciter during the load cycle, switching the accumulators from the operating cavity of the force exciter to the pressure line during the unload cycle.

4. A device according to Claim 1, differing in that in order to increase the reliability of operation of the emergency protection system by checking its readiness, it includes emergency imitators consisting of buttons connected to the circuit controling the switches of the emergency protection system.

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USSR

BARANOV, S. A., SHATINSKIY, V. M., et al. (Kurchatov Institute of Atomic Energy)

"New Data on the Alpha Decay of ^{249}Cf"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, June 1973, pp 1970-1974

Abstract: The alpha spectrum of ^{249}Cf is investigated in the 5150 to 5750-kev alpha-particle range by means of a precision magnetic alpha spectrometer with spatial particle-beam focussing at an angle of $\pi\sqrt{2}$. Twenty-three alpha-transitions to ^{245}Cm levels in the 0.5-1.0-Mev excitation energy range are observed. The gamma rays are studied with a Ge(Li) detector with a volume of about 5 cm^3. It is possible to set up a more complete energy level scheme for ^{245}Cm based on an analysis of the experimental data. In particular, rotational bands $7/2^-[743]$ and $7/2^+[613]$ ascribable to the 645- and 722-kev levels are observed. It is pointed out that a rotational band $3/2^+[622]$ for an excitation energy of about 900 kev may exist.

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1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--INVESTIGATION OF ALPHA DECAY OF THE ISOTOPES TH PRIME228 AND TH PRIME229 -U-
AUTHOR-(02)-BARANOV, S.A., SHATINSKIY, V.M.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, JOURNAL OF NUCLEAR PHYSICS; MAY 1970,PP 925-32

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--THORIUM ISOTOPE, ALPHA DECAY, SPECTROGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1519 STEP NO--UR/0367/70/000/000/0925/0932

CIRC ACCESSION NO--AP0135180
UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135180

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF A STUDY OF ALPHA DECAY OF THE ISOTOPES TH PRIME228 AND TH PRIME229 ARE PRESENTED. THE MAJOR EXPERIMENTS WERE CONDUCTED ON A MAGNETIC ALPHA SPECTROGRAPH WITH SPACIAL FOCUSSING OF THE PARTICLE BEAM AT AN ANGLE OF PI SQUARE ROOT 2. IN THE CASE OF TH PRIME228, ALPHA GROUPS CORRESPONDING TO THE TRANSITIONS INTO THE RA PRIME224 LEVELS WITH QUANTUM NUMBERS 0 PRIME POSITIVE, 2 RPIME POSITIVE, 4 PRIME POSITIVE (GROUND STATE BAND) AND 1 PRIME NEGATIVE, 3 PRIME NEGATIVE (OCTUPOLE OSCILLATION BAND) WERE FOUND. IT WAS ESTABLISHED THAT THE MOMENT OF INERTIA IN THE CASE OF THE RA PRIME224 OCTUPOLE STATE IS 80PERCENT LARGER THAN IN THE CASE OF THE GROUND STATE. IN THE TH PRIME229 SPECTRUM MORE THAN THIRTY ALPHA LINES WERE DETECTED, THE MAJOR PART FOR THE FIRST TIME. EVIDENCE WAS OBTAINED THAT A ROTATION BAND WITH QUANTUM NUMBERS FIVE HALVES PRIME POSITIVE (633) EXISTS IN THE DAUGHTER NUCLEUS.

UNCLASSIFIED

USSR

BARANOV, S. A.; et al (Kurchatov Institute of Atomic Energy)

"Energy Levels of U^{234} Occurring with Alpha Decay of Pu^{238}"

Moscow, Yadernaya Fizika; December, 1970; pp 1105-7

ABSTRACT: The alpha-particle emission of Pu^{238} in the energy range of 4500-5500 kev was studied by means of a magnetic alpha-ray spectrograph. 10 alpha-particle groups were detected; the first 5 correspond to the transitions to the levels of the rotation band of the ground state with the quantum numbers 0^+ to 8^+. The 788-kev level of U^{234} is the lowest one in the band due to the octupole nuclear vibrations. The 808- and 852-kev levels correspond to the β-vibration states of U^{234} with the quantum numbers 0^+ and 2^+.

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USSR

BARANOV, S. A., et al (Kurchatov Institute of Atomic Energy)

"Investigation of α Decay of Es^{253} and Energy Levels of Bk^{249}"

Moscow, Yadernaya Fizika, June 1971, pp 1135-1140

Abstract: The scheme of the excited states of the Bk^{249} nucleus resulting from the alpha decay of Es^{253} was investigated by means of the deviation of charged particles in a magnetic field. A sample of einsteinium carefully purified from foreign admixtures was used in the experiment. The alpha-particle spectrum of einsteinium, in which more than 19 lines belonging to the Es^{253} isotope were detected, is presented. Analysis of the experimental data indicates a presence of three rotational bands with quantum numbers $^7/_2^+[633\uparrow]$, $^7/_2^-[521\uparrow]$, and $^5/_2^+[642\uparrow]$ in the level scheme of Bk^{249}. The constants $\hbar^2/2J$ in the well-known Bohr-Mottelson formula for the rotational bands were found to be 4.7, 6.4, and 5.5 kev respectively.

The article includes two figures and one table. There are 12 references.

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USSR

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BARANOV, S. A.; SHATINSKIY, V. M.; et al

"Investigation of Alpha-Decay of the Isotopes Th^{228} and Th^{229}"

Moscow, Journal of Nuclear Physics; May 1970, pp 925-32

ABSTRACT: Results of a study of alpha-decay of the isotopes Th^{228} and Th^{229} are presented. The major experiments were conducted on a magnetic alpha spectrograph with spacial focussing of the particle beam at an angle of $\pi\sqrt{2}$. In the case of Th^{228}, alpha-groups corresponding to the transitions into the Ra^{224} levels with quantum numbers 0^+, 2^+, 4^+ (ground state band) and 1^-, 3^- octupole oscillation band) were found. It was established that the moment of inertia in the case of the Ra^{224} octupole state is 80% larger than in the case of the ground state. In the Th^{229} spectrum more than thirty alpha-lines were detected, the major part for the first time. Evidence was obtained that a rotation band with quantum numbers $5/2^+[633]$ exists in the daughter nucleus.

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USSR

BARANOV, S. A., et al, Journal of Nuclear Physics; May 1970, pp 925-32

The authors extend their thanks to N. I. Aleshin, Yu. N. Dmitriyev, K. I. Merkulova, and V. M. Shubko for their assistance in the work.

The article includes three figures and two tables. There are 17 references.

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1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ALPHA DECAY OF CALIFORNIUM 250 AND CALIFORNIUM 252 -U-

AUTHOR-(03)-BARANOV, S.A., SHATINSKIY, V.M., KULAKOV, V.M.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(3), 701

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ALPHA DECAY, CALIFURNIUM ISOTOPE, ALPHA SPECTROMETER, EVEN EVEN NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/1080 STEP NO--UR/0367/70/011/003/0701/0701

CIRC ACCESSION NO--AP0110770

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110770

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLES ALPHA EMISSION OF PRIME250 CF AND PRIME 252 CF WAS STUDIED BY USING A DOUBLE FOCUSING MAGNETIC ALPHA SPECTROGRAPH. THE VALUE OF DELTA EALPHA-EALPHA FOR ALPHA BANDS OF CF IS SIMILAR TO 0.03PERCENT, AT A SOLID ANGLE OF OMEGA EQUALS 1 TIMES 10 PRIME NEGATIVE4 TIMES 4 PI AND USEFUL SOURCE SURFACE S EQUALS 1 TIMES 40 MM PRIME2. FOUR AND FIVE ALPHA GROUPS WERE DISCOVERED IN THE SPECTRUM OF THESE EVEN EVEN ISOTOPES, RESP. THE ALPHA PARTICLE ENERGIES, THEIR INTENSITIES, AND THE LEVEL ENERGIES OF THE DAUGHTER NUCLEI, ALONG WITH THE CORRESPONDING VALUES OF I PRIMEPI, ARE PRESENTED. THE VALUE H PRIME2-2J IS SIMILAR TO 7 KEV FOR BOTH LEVELS.

UNCLASSIFIED

USSR

UDC 654.924.5

BARANOV, S. I., MOROZOV, B. V., and RUVINSKIY, B. I.

"An Integrated MDS Microcircuit"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 22, Aug 71, Author's Certificate No 309459, Division H, Filed 1 Jun 70, published 9 Jul 71, p 215

Translation: This Author's Certificate introduces an integrated MDS microcircuit which contains an input element and an inverter. As a distinguishing feature of the patent, functional possibilities are extended without increasing the number of external leads by incorporating into the microcircuit an additional stage based on two MDS transistors in which the source and gate of one transistor are connected to the output of the input element, the gate of the other transistor is connected through the inverter to the input of the input element, and the source is grounded. The sinks of both transistors are connected to the output of the input element.

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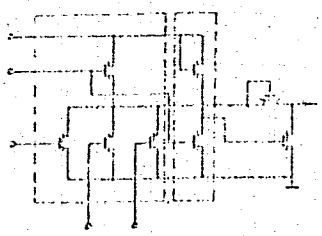
USSR

BARANOV, S. I., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 22, Aug 71, Author's Certificate No 309459, Division H, filed 1 Jun 70, published 9 Jul 71, p 215



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IN THE COMMITTEE FOR INVENTIONS AND DISCOVERIES
UNDER THE COUNCIL OF MINISTERS USSR

[Announcements; Moscow, Vestnik Akademii Nauk SSSR, Russian, No 7, July 1973, pp 132-133]

The Committee has registered the following scientific discoveries:

V. P. KAZNACHEYEV, S. P. SHURIN and P. P. MIKHAYLOVA. "The effect of intercellular distant electromagnetic interactions in a system of two tissue cultures."

Formulation of the discovery: Experimentally established was the previously unknown effect of distant intercellular electromagnetic interactions between two tissue cultures during the action on one of them of factors of biological, chemical or physical nature with characteristic reaction of the other (intact) culture in the form of a "mirror" cytopathic effect, which determines the cell system as a detector of modulation peculiarities of electromagnetic radiation.

Priority of invention: 15 February 1966

Certificate No 122. Application No OT-7097

S. M. BARANOV. "The effect of change of structure and properties of alloys."

By this discovery the paths of experimental evaluation of the role of quantum effects in biological systems are designated. It can help practice in finding means of effect on pathological processes by the coordination of noises arising in a photon channel of information transmission.

Formulation of the discovery: Experimentally established was the previously unknown effect of change of the structure and

BARANOV, S. M.

properties of alloys based on iron, caused by the presence of trace impurities of compounds containing oxygen of the type of silicon monoxide.

Priority of Invention: 7 June 1951

Certificate No 124. Application No OT-3717

Established was the identity of processes taking place during the crystallization of solutions of mineral salts in the presence of a surface-active colloidal admixture, and secondary crystallization of iron-based alloys containing an admixture of silicon monoxide. The discovered effect permits creating a new theory connecting the properties of steel and iron-based alloys. Scientific principles of new technological processes have also been elaborated which assure, in combination with rational alloying, obtaining alloys with prescribed properties.

G. A. AVADKOV, V. I. GOL'DANSKIY, T. N. IGNATOVICH, V. L. TAL'ROZE, P. A. YAMPOL'SKIY, I. M. BARKALOV, A. N. DREMIN, and A. N. MIKHAYLOV. "The effect of formation of polymers in a shock wave."

Formulation of the discovery: Experimentally established was the previously unknown effect consisting in the fact that, as a result of passage of a shock wave through monomers present in a condensed phase polymers are formed, the characteristics of which depend on the amplitude of the shock wave.

Priority of invention: 23 June 1964

Certificate No 125. Application No OT-3848

Investigation of this effect intensifies the understanding of processes taking place behind the front of a shock wave under the specific conditions of instantaneous unilateral immersion of a substance on the front. It substantially expands the area of application of shock waves and their technological use to obtain polymers whose characteristics can be varied by changing the conditions of effect of those waves.

YE. S. MASHKOVA, V. A MOLCHANOV, D. D. ODITSOV, V. G. TEL'KOVSKIY, AND V. M. CHICHEROV. "The effect of anisotropy of ion-electron emission of single crystals."

Formulation of the discovery: Established was the previously unknown effect of anisotropy of the ion-electron emission of single crystals, consisting in reduction of the number of emitted electrons when the incident ions are directed along the crystallographic axes of the target.

USSR UDC 620.178

BARANOV, S. M., VOROB'YEVA, G. A., KARATUSHIN, S. I., Leningrad

"Tendency of Type 40Kh Steel from Various Melts to Brittle Rupture"

Problemy Prochnosti, No 11, 1971, pp 101-105.

ABSTRACT: The influence of the method of deoxidation of Type 40Kh fine-grained steel on its brittle rupture tendency is studied. Tests are performed using impact specimens with a fatigue crack. The value of a_3 [the work expended in the growth of an existing crack to critical size] and a_p [remaining component of impact toughness] are determined. Throughout the entire interval of below-freezing temperatures, the value of a_p is significantly (3-4 times) higher for heat-treated steel produced by siliconless deoxidation.

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USSR

UDC 547.813+547.241

KRIVUN, S. V., VOZIYANOVA, O. F., and BARANOV, S. N.

"Pyrans and Salts of Pyrilium with Phosphorus-Containing Substitutions"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 91-95

Abstract: If pyrilium salts interact with sodium slats of dialkyl phosphites under the conditions of the Michaelis-Becker reaction, it is possible to use heteroaromatic cations with any anions. This interaction takes place under significantly midler conditions than previously reported (S. V. Krivun, et al., DAN SSSR, No 196, 600, 1971). This is more convoient and safer and leads to pure final products. Various pyrilium, flavilium and xanthilium salts lead to the corresponding pyranil phosphonates on interacting with sodium salts of diethyl phosphite. During oxygen hydrolysis, the pyranil phosphonates are converted into phosphonic acids. These phosphonic acids and phosphonates react with triphenylmethyl perchlorate to form the pyrilium salt with phosphorus-containing substitutions.

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USSR UDC 547.813 + 547.241

KRIVUN, S. V., BARANOV, S. N., and VOZIYANOVA, O. F., Institute of Physical Chemistry, Acad. Sc. UkrSSR, Donetsk Branch

"Carbanions From Pyranylphosphonates. Synthesis and Reactions With Carbonyl Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, pp 359-365

Abstract: Phosphonates derived from some cyclic aromatic cations form colored active carbanions in the reaction with potassium tert-butoxide. Reacting these carbanions with carbonyl compounds yields alkylidene substituted derivatives of the appropriate rings. The latter and easily strong mineral acids, such as hydrochloric acid, forming new aromatic and heteroaromatic cations.

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USSR

UDC 547.831+661.52

SHEYNKMAN, A. K., PRILEPSKAYA, A. N., KUCHERENKO, A. P., BARANOV, S. N.

"Direction of Quaternization of Six-Membered Nitride Heterocycles Containing the Dialkylaminophenyl Radical"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol XXXVIII, No 6, 1972, pp 589-594

Abstract: It is known that the cause of the chromaticity of pyridine and benzopyride salts is frequently the formation of complexes with charge transfer [E. M. Kosover, Novyye problemy fizicheskoy organicheskoy khimii, Mir Press, Moscow, 36-94, 1969]. Accordingly, the conclusions of D. I. Camaise, et al. [Chem. and Ind., 1645, 1967] were checked on various six-membered heterocycles containing the n-dialkylaminophenyl radicals in the α and γ positions. Thus, a study was made of the direction of quaternization under various conditions of bases (I) and also 2-n-dialkylaminophenyl quinolines (II), 2-(1'-alkyl-1',2',3',4'-tetrahydroquinolinyl-6')-quinolines (III) and 9-n-dialkylaminophenylacridines (IV). In the reaction of 2-n-dialkylaminophenylquinolines and their analogs with alkyl halides at 80-150°, the following quaternary salts were obtained: 4-(n-dialkylaminophenyl)-pyridinyl, 2(n-dialkylaminophenyl)quinolinyl, 1-methy-6-(quinolyl-2')-1, 2, 3, 4-tetrahydroquinolinyl, 9-n-(dialkylaminophenylacridinyl). Substitutions are presented for the ring R' and the extraring nitrogen atom R and the anions X. Synthesis procedures, physical and chemical characteristics and yields are presented for eight compounds.

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USSR

UDC 547.813

KRIVUN, S. V., VOZIYANOVA, O. F., and BARANOV, S. N., Donetsk Department of Physical and Organic Chemistry of the Institute of Physical Chemistry, Academy of Sciences of the UkrSSR; Donetsk State University

"Reactions of Pyranylidenephosphoran With Carbonyl Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 298-302

Abstract: Active phosphorans are synthesized by reacting potassium tert.--butoxide with phosphonium salts derived from salts of pyrylium and triphenylphosphine. The resultant phosphorans are reacted with various carbonyl compounds to give alkylidenepyrans. These pyrans combine with mineral acids to give the corresponding pyrylium salts. The structure of the salts is confirmed by IR-spectroscopy.

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USSR UDC 547.813+547.241

KRIVUN, S. V., VOZIYANOVA, O. F., BARANOV, S. N.

"Phosphonic Acids and Their Esters Based on Aromatic Cations"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 58-62

Abstract: The isomerization of trialkylphosphites by the Arbuzov reaction is widely used to synthesize allyl and acetophosphonic acids and their esters [A. B. Arbuzov, Reaktsii i metody issledovaniya organicheskikh soyedineniy, No 3, 7, 1954]. The theoretical possibility of the interaction of triethylphosphite with pyridine [A. K. Sheykman, et al., ZhOKh, No 40, 700, 1970] and pyryl [O. F. Voziyanova, et al., ZhOKh, No 40, 1905, 1970] salts has been proved recently. A detailed study of the interaction of triethylphosphite with pyrylium salts demonstrated that chlorides, bromides or iodides of the pyrylium cations with free γ-positions are capable of reacting with phosphite by the Arbuzov reaction with the formation of esters of pyranylphosphonic acids. The latter are converted by acid hydrolysis to pyranylphosphonic acids. On interaction with hydride-ion acceptor, phosphonic acids and their esters are converted to the corresponding pyrylium salts. The tropylium and cyclopropenylium salts react analogously.

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USSR

UDC 547.739.3'812'821

DULENKO, V. I., ALEKSEYEV, N. N., and BARANOV, S. N., Donetsk Branch of Physical-Organic Chemistry, Institute of Physical Chemistry, Acad. Sc., UkrSSR, Donetsk

"Selenopheno [3,2-c]pyrylium Cation -- A new Heteroaromatic System"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 7, Jul 71, pp 997-998

Abstract: Acylation of 5-methyl-2-acetonyl derivatives of selenophene (I) with carboxylic anhydrides (II) in presence of equimolar quantities of perchloric acid (III) yields selenopheno[3,2-c]pyrylium perchlorates (IV). The reaction is carried out at room temperature by adding (I) to a previously prepared mixture of an equivalent amount of (III) and excess (II). The structure of the products was supported by IR spectra. An intensive band at 1620-1616 cm^{-1} was assigned to symmetric valence vibrations of the pyrylium cation. The product is a new heteroaromatic system capable of reactions typical of the pyrylium system: reaction of ammonia with selenopheno[3,2-c]pyrylium salts yields new selenopheno[3,2-c]pyridines: 2,3,4,6-tetramethylselenopheno[3,2-c] pyridine, m.p. 81-82° and 2,4,6-trimethylselenopheno[3,2-c] pyridine, m.p. 59-60°.

1/1

USSR

UDC 547.241

VOZIYANOVA, O. F., BARANOV, S. N., KRIVUN, S. V., Donetsk Branch of Physico-Organic Chemistry, Institute of Physical Chemistry, Academy of Sciences Ukrainian SSR

"Pyranylphosphinic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1905-1906

Abstract: Reaction of 2,6-di-p-bromophenylpyrylium bromide with triethylphosphite at 100°, followed by hydrolysis with concentrated HCl, yields the respective pyranylphosphinic acid, m.p. 181°, which on boiling with triphenylmethyl perchlorate converts to the pyrylium salt m.p. 257° in which the phosphonium acid radical is in position 4. Under analogous conditions, 2,6-diphenylpyrylium bromide gives pyranyl phosphinic acid which crystallizes with one molecule of water and melts at 248°. Other 2,6 substituted pyrylium salts will react with triphenylphosphite under above conditions.

1/1

USSR

UDC 547.813+547.241

KRIVUN, S. V., BARANOV, S. N., and VOZIYANOVA, O. F., Donets Department of Physicoorganic Chemistry of the Institute of Physicochemistry, Ukrainian SSR Academy of Sciences

"Arbuzov Rearrangement in the Series of Aromatic Cations"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 3, 21 Jan 71, pp 600-602

Abstract: It had been shown that pyrylium chlorides, bromides and iodides with no substituent in the γ-position react with triethyl phosphite and form, by rearrangement, the corresponding esters of pyranylphosphonic acid. These products are viscous, not distillable, and difficult to crystallize. They were hydrolyzed to the corresponding acids. Pyranylphosphonic acid crystallizes with one molecule of hydrate water. The pyrylium perchlorates of this and similarly prepared phosphonic acids are yellow crystals and are easily hydrolyzed. Several pyrylphosphonic acids were so transformed into the corresponding pyridines for identification purposes. 2,6-Diphenylpyranylphosphonic acids was prepared from 2,6-diphenylpyrylium bromide. Similarly prepared was the thia analog, as well as the 2-phenylbenzylpyranyl- and 2-phenyl-5,6,7,8-tetrahydrobenzopyranylphosphonic acids.

1/1

USSR UDC 547.241+547.835+547.821+547.558.1

SHEYNKMAN, A. K., SAMOYLENKO, G. V., and BARANOV, S. N., Donets State University, Donets Department of Physical and Organic Chemistry of the Institute of Physical Chemistry, Academy of Sciences Ukrainian SSR

"Arbuzov Rearrangement Under the Action of Heteroaromatic Cations"

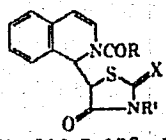
Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 6, 1971, pp 1,377-1,378

Abstract: Recently D. REDMORE suggested the synthesis of phosphonic acids of the acridine series by the interaction of quarternary acridinium salts with diethylsodium phosphate by the Michaelis-Becker method. At the same time, the authors of the present article, which is the twelfth in the series "Reactions of Cyclammonium Cations," suggested a more general method for the synthesis of heterocyclic phosphonic acids by the reaction of trialkyl phosphites with N-acyl salts of six-membered nitrogen heterocycles. This reaction proved especially convenient with protonic salts of some six-membered nitrogen heterocycles. Thus, reaction with acridine hydrochloride yielded not only 9-acridinylphosphonic acid, but also dialkyl-9,10-dihydroacridine-9-phosphonates. Dehydrogenation of the latter gives dialkyl-acridine-9-phosphonates and then, by acid hydrolysis, acridinyl-9-phosphonic acid. The reaction is evidently common to all heteroaromatic cations.

1/1

Acc. Nr: AP0045141 Abstracting Service: CHEMICAL ABST. Ref. Code: UR0409

90355h Reaction of N-acylisoquinolinium salts in situ with thiazolidones. Sheinkman, A. K.; Deikalo, A. A.; Baranova S. N. (Donets. Gos. Univ., Donetsk, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 130–1 (Russ). Heating 3-phenyl-5-(2-benzoyl-1,2-dihydro-1-isoquinolyl)-2,4-thiazolidinedione, m. 189–90°, with KOH gave 2-benzoyl-1,2-dihydro-1-isoquinolylthioglycolic acid, m. 95.6°. Reaction of isoquinoline with various thiazolidinones in the presence of acyl halides gave 1-acyl-1,2-dihydroisoquinolyl thiazolidinones (I) (R, R', X and m.p. given): Ph, Et, S,



(I)

162.4–3°; Ph, Ph, NPh, 212.5–13°; Ph, Ph, S, 211–12°.

G. M. Kosolapoff

REEL/FRAME 19780041

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--REACTIONS OF CYCLAMMONIUM CATIONS. VII. REACTION OF ACRIDINE WITH ACTIVATED AROMATIC COMPOUNDS IN THE PRESENCE OF AN ACYLATING AGENT -U-
AUTHOR-(03)-SHEYNKMAN, A.K., POTASHNIKOVA, S.G., BARANOV, S.N.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG., KHIM. 1970, 6(3) 614-19

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACRIDINE, MORPHOLINE, IODINATED ORGANIC COMPOUND, QUINOLINE, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1425 STEP NO--UR/0366/70/006/003/0614/0619

CIRC ACCESSION NO--AP0112419
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF 10,METHYL,9,MORPHOLINO,9,10,DIHYDROACRIDINE WITH ACRIDINIUM METHIODIDE GAVE STABLE 9,MORPHOLINOACRIDINIUM METHIODIDE AND N,METHYLACRIDINE. THIS HYDRIDE TRANSFER REACTION SERVED AS A MODEL FOR A NEW SYNTHESIS OF 9,(R,SUBSTITUTED),ACRIDINES (I). THE REACTION OF ACRIDINE WITH A MIXT. OF RH AND R PRIMEI COCL GAVE 39-83PERCENT I AND N (R PRIMEI CO SUBSTITUTED) ACRIDINES (R GIVEN): P,ME SUB2 NC SUB6 H SUB4, P,ET SUB2 NC SUB6 H SUB4, P,MEETNC SUB6 H SUB4, P,(PH CH SUB2) SUB2 NC SUB6 H SUB4, P,ME(PHCH SUB2)HC SUB6 H SUB4, 1,METHYL,2,3,DIHYDRO,5,INDOLINYL, 1,METHYL,1,2,3,4,TETRAHYDRO,6,QUINOLINYL, 1,ETHYL,2,METHYL 1,2,3,4,TETRAHYDRO,6,QUINOLINYL, 1,ETHYL,2,METHYL,1,2,3,4,TETRAHYDRO,6,QUINOLINYL, AND P,MORPHOLINO,PHENYL.

UNCLASSIFIED

Nitrogen Compounds

USSR B UDC 615.31:547.789.5

BARANOV, S. N., KOCHKANYAN, R. O., Donets University; Donets Branch of Physical and Organic Chemistry, Academy of Sciences Ukrainian SSR

"Synthesis and Transformations of 5-Bromo-3-phenylthiazolidindione-2, 4"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol IV, No 3, 1970, pp 25-28

Abstract: 3-Phenylthiazolidindione-2,4 was brominated in glacial acetic acid to form 5-bromo- and 5,5-dibromo derivatives which possess high reactivity. Reaction of the 5-bromo derivative with aromatic amines yields amino derivatives of normal structure. The course of the reaction is similar to that by Menshutkin. Reaction of 5-bromo derivatives with heterocyclic bases also readily yields 5-amino derivatives. With primary and tertiary aliphatic amines 5-bromo derivatives react according to a different mechanism. Instead of normal amination products, secondary amines and quaternary ammonium salts, 5-bromo derivatives go through dehydrobromination and form 5,5'-bis-(3-phenylthiazolidindione-2,4). Microbiological investigations of the synthesized 5-halo- and 5-aminothiazolidindione-2,4 indicate their bacteriostatic effect in a 1:100,000

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200310006-7"

USSR

BARANOV, S. N., et al, Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol IV, No 3, 1970, pp 25-28

solution with respect to tubercular saprophytic microbacteria Bg, smegma and Rabinovich bacilli. The synthesized compounds also included 5-arylamino-3-phenylthiazolidindiones-2,4 which are described as N-aceto derivatives. Their infrared spectra showed absorption bands in the 3300-3700 cm^{-1} region corresponding to stretching vibrations of the NH-group.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CYCLOPROPENYL, AND CYCLOHEPTATRIENYLPHOSPHONIUM SALTS -U-

AUTHOR-(04)-DULENKO, V.I., SEMENOV, N.A., BARANOV, S.N., KRIVUN, S.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 701

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CYCLIC GROUP, ORGANIC PHOSPHORUS COMPOUND, POLYNUCLEAR HYDROCARBON, PERCHLORATE, BROMIDE, BORON FLUORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0885 STEP NO--UR/0079/70/040/003/0701/0701

CIRC ACCESSION NO--AP0124548

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124548
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION PPH SUB3 WITH I (X EQUALS CLO SUB4, BF SUB4 OR BR) AFTER BRIEF HEATING IN A POLAR SOLVENT SUCH AS MENO SUB2, MECN, OR CHCL SUB3, GAVE 100PERCENT II. THE CHARGE TRANSFER TOWARD THE P ATOM IN II TENDS TO STABILIZE THE PERCHLORATE AND REDUCES HYGROSCOPICITY OF THE BROMIDE. USE OF THESE SALTS FOR VITTIG REACTIONS SHOULD AFFORD A ROUTE TO ALKYLIDENE DERIVS. OF CYCLOHEPTATRIENE AND CYCLOPROPENE, WHEN EITHER TROPYLIUM OR I IONS ARE USED IN THE ABOVE REACTION, RESP. FACILITY: DONETS. OTD. INST. FIZ. KHIM. IM. PISARZHEVSKOGO, DONETSK, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SYNTHESIS AND REACTIONS OF 5,BROMO,3,PHENYLTHIAZOLIDINE,2,4,DIONE -U-

AUTHOR-(02)-BARANOV, S.N., KOCHKANYAN, R.O.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(3), 25-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BROMINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, ORGANIC SULFUR COMPOUND, ORGANIC AZOLE COMPOUND, AROMATIC KETONE, CHEMICAL SYNTHESIS, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0047 STEP NO--UR/0450/70/004/003/0025/0028

CIRC ACCESSION NO--AP0119043

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119043

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BROMINATION OF 3,PHENYL,2,4,THIAZOLIDINE-DIONE (I) IN ACOH YIELD 93PERCENT 5-BR DERIV. (II), M. 106-7DEGREES (MEOH). BROMINATION OF II GAVE 85-90PERCENT 5,5,DI,BR DERIV., M. 127DEGREES (MEOH). A MIXT. OF 0.1 MOLE II, 0.02 MOLE ARYLAMINE, AND 20 ML MEOH WERE REFLUXED 30 MIN TO YIELD 13 III (R PRIME1 EQUALS H, ME, OR ET, R PRIME2 EQUALS H, O, M, OR P-ME, O, OR P-MEO, OR P-BR, OH, CO SUB2 H, OR CO SUB2 ET). REFLUXING A MIXT. OF 0.01 MOLE III (R PRIME1 EQUALS H), 2 ML ACCL, AND 15 ML ACOH 40 MIN GAVE III (R PRIME1 EQUALS AC, R PRIME2 EQUALS H, O, M, OR P-ME, O OR P-MEO, OR P-BR). BOILING II WITH CYCLIC SECONDARY AMINES IN MEOH YIELDED THE FOLLOWING DERIVS. OF I: 5,TETRAHYDROQUINOL,1,YL,5,(1,INDOLYL), AND 5,(PIPERIDINO). FACILITY: DONETS. UNIV., DONETSK, USSR.

UNCLASSIFIED

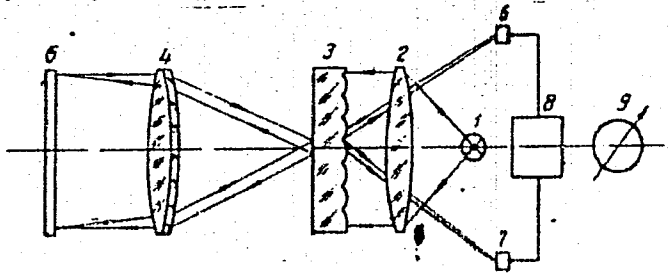
AA0044229

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

241743 PHOTOELECTRIC AUTOCOLLIMATOR has two photoelectric receivers (6,7) which are connected to differential amplifier (8) and recorder (9). Optical raster (3) with cylindrical elements is arranged to have the same focal plane as an objective (4) so that the amplitude and the sign of a signal on recorder (9) will be proportional to the difference of the signals from the photoelectric receivers and will indicate the direction and amount of any deflection of mirror (5).

29.2.68 as 1222967/18-10.G.S. KHRULKOV & V.A.BARANOV (9.9.69) Bul 14/18.4.69. Class 42h. Int.Cl.G 02 b.



1/h

4

19770724

23204
S/019/61/000/008/041/055
A153/A127

9,7140

AUTHOR: Baranov, V.S.

TITLE: Long-time memory device

PERIODICAL: Byulleten' izobreteniy, no. 8, 1961, 47

TEXT: Class 42m, 14. No. 137701 (665533/26 of May 4, 1960).
A long-time memory device of a matrix type, containing in its component units digital cells in the form of pairs of coils interconnected by ferrite rods; it is distinct from others in that for the purpose of increasing the operational speed and for facilitating the work-process in the course of assigning and replacing information, it is fitted with an air-operated device and a system of air conduits containing the ferrite rods, while the control of the air-operated device gates is effected with the aid of electromagnets.

Card 1/1

AP9023399 IAA 5/1/69 V.9 #9 UR 0293

A69-21768 #
SIMULATION OF THE FLOW OF INTERPLANETARY PLASMA AROUND THE EARTH'S MAGNETOSPHERE AND PLANETS [K VOPROSU MODELIROVANIIA OBTEKANIIA MAGNITOSFERY ZEMLI I PLANET MEZHPLANETNOI PLAZMOI].

V. B. Baranov.

Kosmicheskie Issledovaniia, vol. 7, Jan.-Feb. 1969, p. 109-116. 14 refs. In Russian.

Attempt at a systematic theoretical analysis of the possibilities of an exact and approximate simulation of the flow of interplanetary plasma around the earth and the planets. The analysis is based on the use of kinetic equations for the particle distribution functions, the Maxwell equations for the electromagnetic field, as well as the boundary conditions. Since the problem considered is quasi-stationary, the influence of the initial conditions is not taken into account.

M.G.

1/1 GW

1932 0415

AT0033896 INTERNAT. AEROSPACE ABST 3-70 US 0000

B

A70-18292

ON THE PROBLEM OF INTERPLANETARY PLASMA-MAGNETOSPHERE INTERACTION SIMULATION.

V. B. Baranov (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR).

IN: RAREFIED GAS DYNAMICS; PROCEEDINGS OF THE SIXTH INTERNATIONAL SYMPOSIUM, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MASS., JULY 22-26, 1968. VOLUME 2. (A70-18251 06-01)

Symposium sponsored by the U.S. Air Force, NASA, and the U.S. Navy.

Edited by Leon Trilling and H. Y. Wachman.

New York, Academic Press, Inc. (Advances in Applied Mechanics. Supplement 5), 1969, p. 1587-1599. 12 refs.

Theoretical analysis of the possibilities of a precise and an approximate simulations of interplanetary plasma flow past the earth and planets. These simulations are based on the use of kinetic equations for the distribution function of particles, Maxwell's equations for the electronic electromagnetic field, and appropriate boundary conditions.

Z.W.

10 12

19710522

ACC NR: AP9009168 SOURCE CODE: UR/0293/69/007/001/0109/0116

AUTHOR: Baranov, V. B.

ORG: none

TITLE: Modeling the flow of interplanetary plasma around the magnetosphere of the earth and other planets

SOURCE: Kosmicheskiye issledovaniya, v. 7, no. 1, 1969, 109-116

TOPIC TAGS: magnetosphere, solar wind, ~~interplanetary plasma~~, atmospheric model, mathematic model, magnetic field plasma effect, plasma flow

ABSTRACT: Laboratory modeling experiments are a useful way of studying the many physical processes associated with the flow of interplanetary plasma around the terrestrial magnetosphere, providing such experiments are correctly set up. The model can only correspond to the physical phenonenon in space if there has been a correct selection of an entire system of dimensionless criteria whose values remain consistent with those in space, thereby resulting in physically similar phenomena. Many experimental works in this field

Card 1/2 UDC: 550.385.41

ACC NR: AP9009168

(e.g., I. P. Shkarofsky, *Astronaut. Acta*, 11, no. 3, 1965) either do not examine the question of similarity criteria at all or use approximate modeling of some of the criteria whose selection is questionable. The theoretical analysis of this question made by M. P. Bachynski and L. P. Block (*AIAA Journal*, 2, no. 11, 1964; *Planet. Space Sci.*, 15, no. 10, 1967) is considered inadequate and based too much on relationships whose applications are too limited (e.g., the use of the generalized Ohm's law, relationships for collisionless shock waves, etc.). An attempt is made in this paper to analyze theoretically the possibilities of precise and approximate modeling of the flow of interplanetary plasma around the earth, moon, and other bodies on the basis of the use of kinetic equations for particle distribution functions, Maxwell equations for electromagnetic fields, and boundary conditions. Inasmuch as the quasi-stationary problem is examined, the influence of initial conditions is not taken into account. Of all the experiments in modeling the interaction of the solar wind with the magnetosphere only the parameters chosen in those of Managadze and Podgornyy (*Geomagnetizm i aeronomiya*, 8, 545, 1968; *Geomagnetizm i aeronomiya*, 8, 618, 1968) are found to correspond to conditions of a collisionless flow. It is concluded that such laboratory experiments can only provide a qualitative picture of the plasma flow. [DM]

Card 2/3 SUB CODE: 08/ SUBM DATE: 09Jul68/ ORIG REF: 006/OTH REF: 003

1925 1926

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INVESTIGATION OF SIMPLE WAVES IN A PLASMA WITH ANISOTROPIC PRESSURE
-U-
AUTHOR--BARANOV, V.B.

B

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA ZHIDKOSTI GAZA,
MAR.-APR. 1970, P. 6-13
DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA WAVE, PLASMA DENSITY, MAGNETOACOUSTIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1281 STEP NO--UR/0421/70/000/000/0006/0013

CIRC ACCESSION NO--AP0124932
UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124932

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS, IN THE CHEW, GOLDBERGER, LOW (1956) APPROXIMATION, OF SIMPLE PLASMA WAVES, WITHOUT PLACING CONSTRAINTS OF THE HYDRODYNAMIC PARAMETERS. THE BEHAVIOR OF THE INTEGRAL CURVES FOR SLOW AND FAST MAGNETOACOUSTIC WAVES IS DETERMINED. IT IS SHOWN THAT IN SOME LIMITING CASES, THE MAGNETOACOUSTIC WAVES TEND TO REVERSE THE DIRDCTION OF PROPAGATION.

UNCLASSIFIED

USSR UDC: 53.07/.08+53.001.5

BARANOV, V. F., PLETNEV, V. V., SMIRNOV, V. V.

"Modeling the Process of Electrons Passing Through Matter"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding--collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 62-67 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A728)

Translation: The authors calculate the spectral-angular distributions of scattered electron radiation behind flat carbon barriers ($\rho = 1.8$ g/cc) in the case of normal incidence of 10 MeV and 20 MeV electrons against the barrier. To evaluate the influence which various effects of interaction have on the nature of spectral distribution of electron radiation behind the barrier, four versions of calculation were done: a) calculation in accordance with the idea of continuous moderation; b) calculation using Blunk-Westphal distribution; c) calculation as in b) with inclusion of large radiation losses; d) calculation as in c) with regard to the formation of delta electrons. A comparison of the calculations with experimental data shows that calculation with the inclusion of energy fluctuations, large radiation losses, and the formation of delta electrons agrees best with the experimentally measured spectrum. M. L.
1/1

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ABSORPTION METHOD FOR DETERMINING THE ENERGY DISTRIBUTION OF ELECTRON RADIATION INCIDENT ON A BARRIER AND PASSING THROUGH IT -U-
AUTHOR-(03)-BARANOV, V.F., ZAYTSEV, R.YA., NALIVAYEV, V.I.

B

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(3), 237-8

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON BEAM, ELECTRON ENERGY, ABSORPTION SPECTRUM, INTEGRAL EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2254 STEP NO--UR/0089/70/028/003/0237/0238

CIRC ACCESSION NO--AP0125832
UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0125832
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENERGY DISTRIBUTION OF E INCIDENT ON A BARRIER AFTER PASSING THROUGH A BARRIER OF FINITE THICKNESS CAN BE CALCD. WITH A FAIR DEGREE OF ACCURACY IF ONE KNOWS THE FUNCTION DESCRIBING THE ATTENUATION OF A RADIATION BEAM WITH A CONTINUOUS SPECTRUM IN BARRIERS OF DIFFERENT THICKNESSES AND THE FUNCTION DESCRIBING THE ATTENUATION OF MONOENERGETIC E. A SERIES OF APPROX. EXPRESSIONS FOR THOSE FUNCTIONS, AND THE CORRESPONDING SOLNS. OF INTEGRAL EQUATIONS FOR THE E ENERGY DISTRIBUTION ARE PRESENTED.

UNCLASSIFIED

USSR

UDC 669.046.5

KHARITONOV, A. S., ZGUR'EV, I. I., MASLOVA, Yu. N., BUKINA, A. F., and BARANOVA, V. G.

"Out-of-Furnace Liquid Steel Degassing by Powder-Like Materials"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS) (Collection of Works, Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 266-267

Translation of Abstract: Data are presented on liquid steel treatment by solid powder-like materials whose boiling temperature is lower than that of steel. Characteristics of the degassing agent (sodium chloride), of the treated 20L steel, melted in a basic 5-ton arc furnace, and of the pre-dried gas carrier (carbon dioxide) are presented. The degree of degassing (47%) with a 1.5 kg/ton sodium chloride consumption is indicated. Consideration is given to the reduction of nonmetallic inclusions and to the improvement of plastic properties in metal refining by sodium chloride. 4 tables.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--CRITERIA OF RECOVERY FROM DIFFUSE TOXIC GOITER -U-

AUTHOR-(02)-BARANOV, V.G., NIKOLAYENKO, N.F.

COUNTRY OF INFO--USSR

B

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 4, PP 50-53

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GOITER, THYROID HORMONE, CHEMOTHERAPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0747 STEP NO--UR/0497/70/048/004/0050/0053

CIRC ACCESSION NO--AP0131342

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131342

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN 68 WOMEN SUFFERING FROM DIFFUSE TOXIC GOITER THE AUTHORS STUDIED THE DYNAMICS OF RADIODINE ABSORPTION BY THE THYROID GLAND AND CONDUCTED TESTS WITH TRI,IODOTHYRONINE IN THE PROCESS OF PROLONGED (FROM 1 TO 4 AND ONE HALF YEARS) MERCASOLYL THERAPY. NORMALIZATION OF RADIOIODINE ABSORPTION BY THE THYROID GLAND AND TESTS WITH TRI,IODOTHYRONINE POINT TO RECOVERY FROM THE DISEASE AS THE RESULT OF PROTRACTED TREATMENT WITH MERCASOLYL. THE DURATION OF EMPLOYMENT OF "MAINTENANCE" DOSES OF MERCASOLYL IS DETERMINED BY THE TIME OF NORMALIZATION OF ABSORPTION AND THE TEST WITH TRI,IODOTHYRONINE.

FACILITY: KAFEDRA ENDOKRINOLOGII LENINGRAD. INSTITUTA USOVERSHENSTVOVANIYA VRACHEY IM. S. M. KIROVA, OTDEL ENDOKRINOLOGII INSTITUTA AKUSHERSTVA I GINEKOLOGII AMN SSSR, LENINGRAD.

1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--RELATION OF INITIAL SUPERMOLECULAR ORGANIZATION IN CRYSTALLINE POLYMER SYSTEMS TO THE ORGANIZATION PRODUCED BY STRETCHING -U-
AUTHOR-(02)-BARANOV, V.G., GASPARYAN, K.A.

COUNTRY OF INFO--USSR

SOURCE--J. POLYM. SCI., PART A-2 1970, 8, 1015-26

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CRYSTALLINE POLYMER, SPHERULITE, POLYMER STRUCTURE, POLYETHYLENE, ANNEALING, POLYCHLOROPRENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0987 STEP NO--US/0000/70/008/000/1015/1026

CIRC ACCESSION NO--AP0136417

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136417

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN INVESTIGATION OF SMALL ANGLE SCATTERING PRODUCED BY POLARIZED LIGHT FROM STRETCHED AND ANNEALED POLYMER SYSTEMS CONTG. SPHERULITES YIELDS INFORMATION ON THE SUPERMOL. TRANSITIONS THAT OCCUR DURING SUCH TREATMENT. A SERIES OF SEMICRYST. POLYMER SYSTEMS (FILMS, FIBERS) SHOW THAT STRETCHING LEADS TO DEFORMATION OF SPHERULITES AND SUBSEQUENT TRANSFORMATION TO AN ORIENTATIONAL SUPERMOL. ORDER. THE SIZE OF THE SINGLE ELEMENT C SUB2 OF THE SUPERMOL. ORDER IN THE DIRECTION OF STRETCHING, DETD. FROM THE DISTANCE BETWEEN THE LAYER LINES OF THE SCATTERING PATTERN, IS RELATED TO THE DIAMETER D SUB0 OF THE INITIAL SPHERULITES BY THE RELATION C SUB2 EQUALS KD SUB0 LAMBDA SUBS, WHERE LAMBDA SUBS IS THE DRAW RATIO OF THE MACROSYSTEM AND K IS A PARAMETER DETG. THE DEFORMABILITY OF THE SPHERULITES. FOR POLYETHYLENE AT ROOM TEMP., K IS UNITY AND FOR POLYCHLOROPRENE IT IS 1.2. CHANGES OF C SUB2 AFTER ANNEALING AND RESTRETCHING OF THE SYSTEMS ALSO OBEY THIS RATIO. FACILITY: INST. MACROMOL. COMPD., LENINGRAD, USSR.

UNCLASSIFIED

Acc. Nr: AP0041845 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: UR0502

B

86836y **Mechanism of the depression of the thyroid gland function with thyroid hormones.** Baranov, V. G.; Loskutova, E. A.; Propp, M. V. (Inst. Fiziol. im. Pavlova, Leningrad, USSR). *Probl. Endokrinol.* 1970, 16(1), 43-6 (Russ). Triiodothyronine (T_3) administered to hypophysectomized rats at 10 μg/100 g daily for 7 days decreased the height of the follicular epithelium and the level of ^{131}I uptake by the thyroid gland and restored these parameters to normal after administration of thyrotropic hormone (TSH) i.m. at 0.5 units daily for 10 days. Height of the follicular epithelium and ^{131}I uptake were higher in TSH-treated rats than in those subjected only to hypophysectomy. T_3 seems to act directly on the thyroid gland, causing morphol. and functional changes characteristic of decreased function, and 1 of the mechanisms seems to be blocking the action of TSH on the gland.
BJJR

LD

07

REEL/FRAME
19751726

Acc. Nr. AP0048843 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code U R0460

B

90932u **Distribution of density in the surface layer of amorphous polymers.** Tsarev, P. K.; Baranov, V. G.; Lipatov, Yu. S. (Inst. Khim. Vysokomol. Soedin., Kiev, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(2), 115–17 (Russ). A method and device for studying the stratification of amorphous polymeric systems are described. Absorbance measurements of tech. poly(Me methacrylate) indicated that it had a complex surface layer. The d. of the surface layer was only very slightly less than that of the underlying mass. DBJR

LD

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REEL/FRAME
19800610

1/2 032 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--COMPARATIVE STUDY OF THE SUPRAMOLECULAR TRANSITIONS OF POLYETHYLENE AND POLYCHLOROPRENE FILMS DURING UNIAXIAL STRAIN -U-
AUTHOR-(04)-BARANOV, V.G., BEZIRGANYAN, P.A., GASPARYAN, K.A., RAPYAN, YU.A.
COUNTRY OF INFO--USSR

B

SOURCE--IZV. AKAD. NAUK ARM. SSR, FIZ. 1970, 5(1), 47-59

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--POLYETHYLENE, POLYCHLOROPRENE, PLASTIC FILM, ELONGATION, BREAKING STRENGTH, X RAY DIFFRACTION, MATERIAL DEFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0968 STEP NO--UR/0431/70/005/001/0047/0059

CIRC ACCESSION NO--AP0136398
UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200310006-7"

2/2 032 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136398

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HIGH PRESSURE POLYETHYLENE (I) AND POLYCHLOROPRENE (II) FILMS WERE ELONGATED UP TO THE BREAKING POINT AND THEIR STRUCTURAL CHANGES WERE STUDIED BY OPTICAL AND X RAY DIFFRACTION. IN I, REGIONS OF THE REVERSIBLE DEFORMATION (40-50PERCENT ELONGATION), IRREVERSIBLE RECRYSTN. (SMALLER THAN OR EQUAL TO 140PERCENT DEFORMATION), AND THE TRANSITION OF THE SPHERULITES TO FIBRILS (SMALLER THAN OR EQUAL TO 500PERCENT DEFORMATION) WERE OBSD. IN II, THERE ARE 2 TYPES OF DIFFRACTION PATTERNS: 1 CORRESPONDING TO DEFORMATION SMALLER THAN OR EQUAL TO 300PERCENT AND THE OTHER TO 350-800PERCENT DEFORMATION. FACILITY: EREVAN. GOS. UNIV., EREVAN, USSR.

UNCLASSIFIED

1/2 043 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--KINETICS AND MORPHOLOGY OF NONISOTHERMAL CRYSTALLIZATION IN POLYMERS DURING DEFORMATION -U-

AUTHOR-(04)-ATAKHODZHAEV, I.K., MANN, G., BARANOV, V.G., FRENKEL, S.YA.

COUNTRY OF INFO--USSR

SOURCE--FASERFORSCH. TEXTILTECH. 1970, 21(4), 145-52

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--CRYSTALLINE POLYMER, POLYETHYLENE, POLYPROPYLENE, THERMAL EFFECT, X RAY STUDY, SPHERULITE, STRESS DISTRIBUTION, CRYSTALLIZATION, MATERIAL DEFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1247 STEP NO--GE/0083/70/021/004/0145/0152

CIRC ACCESSION NO--AP0116709

UNCLASSIFIED

2/2 043 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116709

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOST IMPORTANT PROCESSES AFFECTING THE NONISOTHERMAL CRYSTN. OF TYPICAL CRYST. POLYMERS (I.E., LOW OR HIGH D. POLYETHYLENE AND ISOTACTIC POLYPROYLENE) UNDER TENSION WERE EXAMD., CONSIDERING QUANT. THE EFFECTS OF TEMP. AND STRESS VARIATIONS ALONG THE DEFORMATION REGION. THE RESULTS OBTAINED BY X RAY ANAL. AND OPTICAL ANAL. ARE DISCUSSED. REFERRING TO PREVIOUS DATA ON POLYMER CRYSTN. KINETICS AND MORPHOL. AND THE FLATTENING OF SPHERULITES.

FACILITY: INST. HOCHMOL. VERBINDUNGEN, LENINGRAD, USSR.

UNCLASSIFIED

USSR UDC: 536.12

POLYAKOV, Yu. A., BARANOV, V. I.

"Impulse Method of Studying Heat Flux Curves in High Temperature Solar Energy Conversion Apparatus"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 1, Jan-Feb 73, pp 156-160.

Abstract: A method is presented for measurement and design of a module with film heat receptors, and results of determination of heat flux curves in the focal plane of the radiant energy concentrater are presented. Brief exposure of the sensors allows high heat flux levels (over 10 kw/cm^2) to be measured. Experimental results comparable with calorimetric measurements are presented. The authors note the high speed of the method suggested. Simultaneous recording of heat fluxes at several points in the focal plane yields a true picture of the distribution of heat flux, determined over a very short time interval; therefore, the method does not require corrections for changes in radiation flux.

1/1

USSR UDC 541.136

[redacted], VDOVICHENKO, N. V., VLASOV, V. M., IVANOV, A. M., MUCHNIK, G. F., RUBASHOV, I. B., and TABAKMAN, L. S., Moscow

"Fuel Cells With Ion Exchange Membranes. Development and Investigation"

Moscow, Elektrokhimiya, Vol 8, No 5, May 72, pp 694-698

Abstract: Fuel cells are described based on cation exchange resin membranes washed free of unbound acid. The use of solid electrolyte imparts certain specific properties to all physical processes occuring in the fuel cells, such as localization of elementary physical acts responsible for current generation. Current generation on the surface of the membrane could not possibly produce the total generated power, so that the electrode inside the membrane must have been contributing substantially to current generation. Several assumptions are made concerning this problem, and a conclusion is reached that current is generated by a thin layer of a catalyst inside the membrane partially filled with water. Two methods are used for water removal from the electrode surface -- thermal and hydraulic -- to assure proper performance of the unit. Thermal method is more versatile but requires a more

USSR

BARANOV, V. I., et al, Elektrokhimiya, Vol 8, No 5, May 72, pp 694-698

complex equipment. The principal problem in this system concerns uniformity of the removal of water. Both types of current generators are described, pointing out the areas where development is still needed, mainly in synthesis of new materials for membranes.

USSR

MILOSERDIN, YU. V.; BARANOV, V. M. et al

"Procedure and Apparatus for In-Reactor Investigations of Physical and Mechanical Properties of Materials"

Moscow, Atomnaya Energiya; August 1973, pp 101-104

Abstract: The procedure and apparatus used for in-reactor determination of elastic constants, internal friction, and prolonged hardness of materials are described. The procedure is based on the determination of parameters of ultrasonic resonance vibrations for specimens in the form of discs of 20-mm diameter and 3-mm thickness. The elastic constants are calculated from resonance frequencies, internal friction from the width of the resonance curve, and hardness from the shift in resonance frequency initiated by Vickers-pyramid indentation. The measuring equipment includes ultrasonic waveguides in the form of thin rods for transmission of vibrations to and from the specimens. The electronic equipment is located in the working area. With the apparatus it is possible to measure the above-mentioned parameters on specimens of structural and fissionable materials at temperatures of self-heating (up to 600°C) with an accuracy sufficient to detect comparatively small variations of the recorded parameters.

The article includes four equations, two figures, and one table. There are 12 references.
1/1

USSR UDC: 639.32

BARANOV, V. M., Moscow

"The Problem of Determination of the Hardness of Materials"

Kiev, Problemy Prochnosti, No 7, Jul 73, pp 89-93.

Abstract: A method is studied for determination of the hardness of specimens of materials, based on measurement of changes in the resonant frequency of the specimen when a rod with a hard tip is forced into it. Based on the method of perturbations, using the solution of the contact problem, a formula is produced which relates the change in frequency to the hardness of the material. For the lower form of the axisymmetrical bending oscillations of a specimen in the form of a circular plate, an experimental comparison of the method studied to the standard method of determination of results for specimens of various metallic materials is presented. The promise of the method for use at high measurement temperatures and the possibility of creating an installation for simultaneous measurement of the modulus of elasticity, hardness and internal friction of small specimens of materials are demonstrated.

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USSR UDC 620.172.22.05

BARANOV, V. M., KOROSTIN, O. S., and MILOSERDIN, Yu. V.,
Moscow Engineering Physics Institute

"Device for Measuring Elasticity and Internal Friction Constants of Small Specimens in a Wide Temperature Range"

Moscow, Zavodskaya Laboratoriya, Vol 38, No 9, 1972,
pp 1143-1144

Abstract: The construction of a device for measuring the modulus of elasticity E, Poisson's ratio μ, and the internal friction Q^{-1} on circular plates (1-5 mm thick, 10-20 mm diam) in vacuum of 10^{-4} mm Hg-column is described by reference to its schematic drawing. The measuring principle is based on the resonance-pulse method. Constants of elasticity E were calculated from resonance frequencies and values of Q^{-1} were determined from the width of the resonance line or from standard formulas. The calculation exactness

USSR

BARANOV, V. M., et al., Zavodskaya Laboratoriya, Vol 38, No 9, 1972, pp 1143-1144

of E and of Q^{-1} were 2.5-3 % and 7-10 %, respectively. The systematic error in determining Q^{-1} decreases with increasing diameter and increasing mass of the specimen. Values of E and Q^{-1} for Nb, Zr, and Ta, determined with the help of the described device, proved its efficiency at temperatures up to 2200 °C. Two figures, two bibliographic references.

2/2

BARANOV, V. M.

DIURNAL CHANGES IN HUMAN GAS EXCHANGE INDICES

[Article by V. M. Baranov, Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 1, pp 55-58, 1972, submitted for publication 19 July 1971]

Abstract: A study was made to determine gas exchange and metabolic rates of test subjects confined in a small chamber. This was the first investigation conducted under conditions of normal and inverted day-night schedules. The purpose of the study was to determine the absolute gas exchange and metabolic rate at different time intervals, as well as to establish the duration of human adaptation to a displaced (by 12 hours) day-night schedule.

A number of studies have been devoted to an investigation of the diurnal rhythm of lung ventilation and gas exchange in animals and man. As early as 1855 Moleschott discovered that during the daytime frogs exhale 8-25 percent more carbon dioxide than at nighttime; this effect was attributed to the influence of light on the animal body. Moleschott, A. D. Slonim and K. P. Kalmykova discovered that monkeys exhibit an increase in basal metabolism during the daytime and a decrease at nighttime (A. D. Slonim, et al.), diurnal changes in gas exchange were detected in bats (N. P. Ivanov, et al.), birds (P. Popugayeva, et al.), rodents (M. R. Kryzelis; L. G. Filatova) and other animals. Similar investigations made on man in most cases have been devoted to a detection of the diurnal variations in external respiration functions (frequency, minute volume of respiration) and heat transfer (I. A. Gladyshev, et al., I. R. Tarkhanov; Fleish; Guier). The number of studies of gas exchange and energy expenditures is relatively small. G. D. Arnautov and Ye. S. Veler attributed the increase in human oxygen consumption which they observed under the influence of light to the formation of conditioned reflexes to light (G. D. Arnautov, et al.). In determining energy expenditures of some shipboard specialists, B. G. Afanas'yev and A. I. Pyurelakin found that the energy expenditures while standing watch at nighttime average 12 percent lower than during the daytime (B. G. Afanas'yev, et al.). Timbal, et al. determined the diurnal rhythm of heat transfer by evaporation. In subjects in a thermally neutral medium it regularly increased from 1200 hours, attaining a maximum by 1700 hours; then the heat transfer decreased to 0400 hours.

USSR UDC 629.76/.78.015:533.6

LEBEDEV, A. A., BARANOV, V. N., KRASIL'SHCHIKOV, M. N., MALYSHEV, V. V.

"Optimal Control Upon Entry Into the Atmosphere"

V sb. Upravleniye v kosmose. T. 1 (Control in Space. Vol 1 -- Collection of Works), Moscow, "Nauka", 1972, pp 256-266 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B346)

Translation: The problem of the synthesis of an autonomous control system for a space device entering the earth's atmosphere with a velocity close to the first cosmic velocity is discussed. 10 ref. Authors' abstract.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--OPTIMAL CONTROL AT ENTERING THE ATMOSPHERE -U-

AUTHOR-(04)-LEBEDEV, A.A., BARANOV, V.N., KRASILSHIKOV, M.N., MALYSHEV, V.V.
COUNTRY OF INFO--USSR, FRANCE

SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 18P.
DATE PUBLISHED--------70

SUBJECT AREAS--SPACE TECHNOLOGY, NAVIGATION

TOPIC TAGS--SPACECRAFT REENTRY CONTROL, SPACECRAFT LANDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0001 STEP NO--FR/0000/70/000/000/0001/0018

CIRC ACCESSION NO--AT0117301
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0117301

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXAMINATION OF THE PROBLEM OF THE SYNTHESIS OF THE SELF CONTAINED CONTROL SYSTEM OF A SPACECRAFT ENTERING THE ATMOSPHERE WITH THE FIRST COSMIC SPEED. DIGITAL CALCULATIONS MADE BY MEANS OF AN ELECTRONIC COMPUTER SHOW THAT THIS SELF CONTAINED CONTROL SYSTEM MAKES IT POSSIBLE TO DECREASE THE DISPERSION COMPONENT OF LANDING SPOTS SIGNIFICANTLY. A HISTOGRAM OF THE LANDING SPOTS IN THE CASE OF CONTROLLABLE AND CONTROLLESS MOTION IS SHOWN. FACILITY: MOSKOVSKII AVIATSIONNYI INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC: 681.327.66

BARANOV, V. S., MURUSIDZE, T. A., Tbilisi Scientific Research Institute of Instrument Building and Means of Automation

"A Semipermanent Memory Matrix"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 20, Jul 72, Author's Certificate No 343303, Division G, filed 5 Oct 70, published 22 Jun 72, p 175

Translation: This Author's Certificate introduces a semipermanent memory matrix which contains a system of wires with open magnetic cores located at their intersection points and fastened to the base of the matrix. The matrix also contains an elastic plate carrying an elastic fabric on its lower surface on which magnetic bridges are arranged above the magnetic cores. Also incorporated in the matrix is a punched card with perforations located above the crossed wires on the base of the matrix. As a distinguishing feature of the patent, information recording density is increased by adding a plate of nonmagnetic material with perforations coinciding with the wire intersections. This additional plate is placed between the elastic plate and the punched card.

1/1

6

USSR

UDC: 621.528:621.59

GORIN, V. P., SHUMSKIY, K. P., LEONOV, V. V., IVANOV, A. Ye., ZAKHAROV, V. S., SIVUSHCHKOV, B. P., KUPRIYANOV, V. I., RODIONOV, A. Kh., BARANOV, V. S., SHTRAKHMAN, A. Ya.

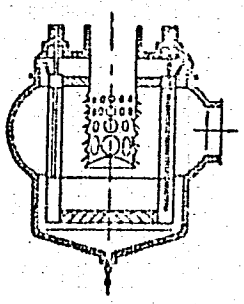
"A Cold Trap"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 72, Author's Certificate No 332253, Division F, filed 9 Jan 69, published 14 Mar 72, pp 136-137

Translation: This Author's Certificate introduces a cold trap for vacuum pumps. The device contains a thermally insulated housing with fittings for connecting it to the exhausting vacuum pump and to the space being evacuated. Located in the housing are optically opaque cryogenic panels cooled by a liquid coolant such as nitrogen. As a distinguishing feature of the patent, the effectiveness of the trap is improved by making the cooled panels in the form of a vertical annular louvred screen with cooling tubes on the faces and collectors for the upper and lower shields located in the cavities of the louvred screen. The screen and shields taken together form a closed nonhermetic chamber which accommodates a dis-

IN, V. P. et al., USSR Author's Certificate No 332253

ributor pipe coaxial with the annular screen and passing through the upper shield. The lower end of the distributor pipe is closed off, and holes are made in the side wall which have a diameter increasing downward along the flow of the gas-vapor mixture. The flow channels between the louvres in the vertical screen increase in cross sectional area toward the periphery, and the upper and lower shields are made with a greater hydraulic drag than the vertical screen.



2/2

USSR UDC: 621.374.4(088.8)

BARANOV, V. Y., DERNOVSKAYA, N. V.

"A Frequency Divider"

USSR Author's Certificate No 265949, filed 29 Mar 67, published 2 Jul 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G259 P)

Translation: This Author's Certificate introduces a frequency divider which contains two division channels based on flip-flops. These flip-flops are connected to an analyzer which is equipped with coincidence circuits. To eliminate any isolated failures of the divider, the coincidence circuits are connected to an OR logic cell which is connected through an integrating circuit, threshold module and delay module to an actuating module which synchronizes the divider in the case of a failure, or switches the outputs of the divider channels.

1/1

Mechanical Properties

USSR UDC 669.15-194:669.14

NIKITSKAYA, V. A., PYATAKOVA, L. L., POLTAVETS, N. A., SHUBINA, S. A., KUZNETSOVA, L. K., VOLKOV, L. G., BARANOV, V. Ya., and CHEREDNIK, L. Ye., Metallurgical Plant imeni Dzerzhinskiy, Dneprodzerzhinsk Industrial Institute imeni M. I. Arsenichev

"Improvement of Mechanical Properties of Hot-Rolled 10KhSND Steel"

Moscow, Metallurg, No 1, Jan 73, pp 16-17

Abstract: Experimental data are presented on the effects of chemical composition, method of final deoxidation, and temperature at the end of rolling on the level of mechanical properties and the amount of waste of 10KhSND steel in the hot-rolled state. The effects of C, Mn, Si, and Cr and their summary effect on the impact strength and the ultimate strength (yield) of 10KhSND steel deoxidized in the ladle with aluminum (1000 g/ton) and ferrotitanium (500 g/ton) are discussed by reference to diagrams. Best results in improving the mechanical properties and in decreasing the amount of waste were obtained by applying calciosilicate (2000 g/ton) and by reducing the rolling temperature to 900 °C at the same time. The use of calciosilicate in the final deoxidation of steel in the open-hearth shop of the Plant imeni Dzerzhinskiy decreased the amount of waste by 5-5.5 times. Two figures, one table.

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USSR

UDC 621.039.56(088.8)

KOROLEV, Ye. V., KOSTYLEV, D. V., ANDREYCHIKOV, B. I., PINCHUK, D. Ya., BARANOV, Ya. I.

"Overload Machine"

Peregruzochnaya mashina (cf. English above), Authors Certificate USSR, Class G 21 d 1/00, No. 325635, Announced 30 October 1966, Published 14 March 1972 (from RZh-50. Yadernyye reaktory, No 11, Nov 72, Abstract No 11.50.110 P)

Translation: An overload machine is patented that contains a shell, a platform, mechanisms for coordinate displacement, and a system for television observation. It has two manipulators to increase the reliability for acquiring and displacing nonequilibrium objects and a synchronization mechanism, a manipulator equipped with a device for the smooth increase and limitation of forces and an auxiliary manipulator equipped with a hand screw. The inner tube of the working manipulator was installed on a compression spring which was balanced by a second spring in order to increase the smoothness of shockless installation of the overload object and between the springs there was installed a transducer to control the magnitude of the force. 1 ill.

USSR UDC 541.183

PLACHENOV, T. G., LEZIN, Yu. S., BARANOV, Ye. I., SEBALLO, A. A., KVASHA, V. I., and SHIRYAYEV, A. N.

"Adsorption Dynamics of Mixtures in Moving Layers of Adsorbents"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 46, No 12, Dec 73, pp 2782-2784

Abstract: Continuous adsorption processes are used to purify various substances from impurities. To achieve optimal results, methods must be developed to calculate the concentration distribution in the solid and gas phases along the adsorption column, the rate of movement of the solid phase, and the distance at which the concentration of the recovered material should be the greatest. A theoretical treatment of an equilibrium situation is given, in which the concentrations do not change with time. The data calculated from the formula derived agree well with experimental results obtained, using a binary mixture of n-octane and benzene vapors on a column filled with SKT-2 charcoal.

1/1

USSR

UDC 621.791.75:621.3.014.3:669.715

PASHCHENKO, K. P. and BARANOV, Ye. N., Engineers

"Welding of Aluminum Alloys in an Impulse-arc Mode with the A-547U Semi-Automatic Welding Machine"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 72, p 48.

Abstract: In contrast to ordinary argon-arc welding, pulsed-arc welding with fusible electrodes allows the process to be reformed at low currents with fine-drop transfer of the electrode metal, improving seam formation, decreasing spraying of the liquid metal, oxidation of impurities and the quantity of smoke produced in the arc zone. This increases the productivity of labor in comparison to welding with infusible electrodes by 2 to 4 times, decreases argon consumption and the cost of welding. In this study, AMg6 aluminum alloy 2.5-3 mm thick was welded with a series-produced A-547U semi-automatic welder, arc voltage 17-18 v, wire diameter 1.5 mm, feed rate of wire 145 m/hr, argon flow rate 8-9 l/min, reverse polarity. Satisfactory joint quality was produced.

1/1

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THE DIAGNOSIS AND OPERATIVE TREATMENT OF DUODENOCOLONIC FISTULAS IN PEPTIC ULCER AND CANCER OF THE STOMACH -U-

AUTHOR-(04)-KOZHEVNIKOV, A.I., KOMAROV, A.S., SIDOROV, A.I., BARANOV, YU.F.

COUNTRY OF INFO--USSR

B

SOURCE--KHIRURGIYA, 1970, NR 4, PP 37-40

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DUODENUM, COLON, DIGESTIVE SYSTEM DISEASE, CANCER, EDIN, LARGE INTESTINE, SURGERY, STOMACH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1239 STEP NO--UR/0531/70/000/004/0037/0040

CIRC ACCESSION NO--AP0054134

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054134

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS COMMIT TO PAPER FIVE OBSERVATIONS OVER PATIENTS WITH DUODENOCOLONIC FISTULAS. IN FOUR PATIENTS THE FISTULA DEVELOPED AS THE RESULT OF DUODENAL PEPTIC ULCER, IN ONE PATIENT DUE TO INFILT78TION AND DISINTEGRATION OF THE CANCEROUS TUMOR OF THE COLON. DISAPPEARANCE OR MARKED WEAKENING OF THE PAIN SYNDROME, CONSTANT DIARRHEA, CACHEXIA, AND SOMETIMES AN INCREASED APPETITE, ARE THE MAIN MANIFESTATIONS OF FISTULA. THE SURGICAL TREATMENT OF DUODENOCOLONIC FISTULAS MAY CONSIST IN SEPARATION OF THE FISTULA, SUTURING OF OPENINGS IN THE HEPATIC ANGLE OF THE LARGE INTESTINE, DUODENUM AND RESECTION OF THE STOMACH. AS A PALLIATIVE OPERATION IN DUODENOCOLONIC FISTULA DUE TO CANCER, WHEN A RADICAL OPERATIVE INTERVENTION IS IMPOSSIBLE, ONE COULD EXCLUDE THE PYLORUS, ESTABLISH GASTROENTEROSTOMY WITH AN INTERINTESTINAL ANASTOMOSIS AND ILEOTRANSVERSOSTOMY.

UNCLASSIFIED

(7)

USSR UDC 632.95

BLIZNYUK, N. K., KVASHA, Z. N., VARSHAVSKIY, S. L., BARANOV, Yu. I., LIBMAN, B. Ya., STREL'TSOV, R. V., PROTASOVA, L. D., MARKOVA, L. I., KHOKHLOV, P. S., MADZHARA, G. A., KIRILINA, L. E., All-Union Scientific Research Institute of Phytopathology

"A Method of Making Thiophosphonyl Dihalides"

USSR Author's Certificate No 337384, filed 31 Oct 69, published 2 Jun 72 (from RZh-Khimiya, No 9, May 73, abstract No 9N500 by T. G. Chekareva)

Translation: Compounds of the general formula $RP(S)X_2$ (I) (R = C_1-C_{12}-alkyl, cycloalkyl, aryl, unsubstituted alkyl or alkyl containing substituents, Cl or Br; X = Cl, Br) are synthesized by reacting $(RS)_3P$ (II) with a 2-10-fold excess of PX_3 with heating to 250-330°C in an autoclave. Example. A mixture of 0.07 mole of II (R = Me) and 0.7 mole of PCl_3 is heated in an autoclave test tube of stainless steel at 290-320°C for 5 hours. The excess PCl_3 is driven off at atmospheric pressure and distillation of the residue in a vacuum gives I (R=Me, X=Cl), boiling point 70-3°/80, $n^{20}D$ 1.5510, d_4^{20} 1.4421, yield 52%. Similar methods are used to produce other compounds of type I (given are R, X, boiling point in °C/mm, $n^{20}D$, d_4^{20}, yield in %): Et, Cl, 64-8/15, 1.5418, 1.3527, 58; Pr, Cl, 85-8/15, 1.5285, 1.2942, 40; iso-Pr, Cl, 72-5/15, 1.5290, 1.3017, 47.5; Bu, Cl, 111-13/25, 1.5269, --, 65;

USSR

SUKHOMLINOV, B. P., Vopr. tekhnol. ulavlivaniya i pererab. produktov koksovaniya, Kharkov, 1972, pp 50-56

sulfur with a sufficient amount of powdered SL. A SN screw mixer is recommended for bringing the components into contact under pressure and pulverizing them at the same time.

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UDC 547.241.07

USSR

BLIZNYUK, N. K., KVASHA, Z. N., PROTASOVA, L. D., MADZHARA, G. A., VARSHAVSKIY, S. L., LIBMAN, B. Ya., and BARANOV, Yu. I., All-Union Scientific Research Institute of Phytopathology

"A Method of Making Dihalophosphines"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 292988, Division C, filed 10 Nov 69, published 15 Jan 71, p 102

Translation: This Author's Certificate introduces: 1. A method of making dihalophosphines by interacting a hydrocarbon halide or polyhalide with white phosphorus or a phosphorus trihalide with the application of heat and in the presence of a catalyst, with subsequent isolation of the goal product by conventional methods. As a distinguishing feature of the patent, the yield of the goal product is increased by using selenium, selenium anhydride or phosphorus selenide as the catalyst. 2. A modification of this method distinguished by the fact that the process is done at a temperature of 250-380°C.

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USSR

UDC 621.039.8.002

BAK, M. A., BARANOV, YU. I., KRIVOKHATSKIY, A. S., and SHLYAMIN, E. A.

"Special Features of the Production of Th^{228} and U^{232} by Neutron Irradiation of Pa^{231}"

Moscow, Akademiya Nauk SSSR, Atomnaya Energiya, Vol 28, No 3, Mar 70, p 234

Abstract: A calculation was made of the U^{232} and Th^{228} accumulation by irradiation of Pa^{231} by slow neutron fluxes in the 10^{13} - 10^{16} neutron/cm^2 · sec density range. About 40% of the initial quantity of Pa^{231} was a maximum accumulation of U^{232} attained during the optimum irradiation time of 1.8 year at the 10^{14} neutron/cm^2 · sec optimal electron flux density. The maximum Th^{228} yield amounts to 0.9% at a 10^{13} neutron/cm^2 · sec flux density for 16.5 years. The U^{232} yield, equal to about 63%, can be attained in one year by the continuous extraction of U^{232} from the irradiated volume of Pa^{231}, irradiated in a loop by a 10^{14} neutron/cm^2 · sec flux. For comparison, only 35% is attained by protactinium irradiation under the same conditions. The accumulation of U^{232} by Pa^{231} irradiation by various slow neutron fluxes is shown in a table. Orig. art. has: 1 table.

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1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--THORIUM-228 AND URANIUM-232 PRODUCTION DURING THE NEUTRON IRRADIATION OF PROTACTINIUM-231 -U-

AUTHOR-(04)-BAK, M.A., BARANOV, YU.I., KRIVOKHATSKIY, A.S., SHLYAMIN, E.A.

COUNTRY OF INFO--USSR

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DATE PUBLISHED-------70

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2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0120756

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE IRRADN. OF PRIME231 PA WITH SLOW N, THE MAX. ACCUMULATION OF PRIME232 U (SIMILAR TO 40PERCENT OF THE STARTING AMT. OF PRIME231 PA) IS OBTAINED BY IRRADN. FOR 1.8 YR AT THE OPTIMUM FLUX OF 10 PRIME14 N-(CM PRIME2-SEC); THE MAX. YIELD OF PRIME228 TH IS 0.9PERCENT, BY IRRADN. FOR 16.5 YR AT A FLUX OF 10 PRIME13 N-(CM PRIME2-SEC). THE AMT. OF PRIME228 TH IN EQUIL. WITH 1 G OF PRIME232 U IS 25.8 MG.

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BLIZNYUK, N. K., et al., USSR Author's Certificate No 332095, filed 10/08/69, published 17/04/72

Cl, 53.5; 124-3/1.5-2, 1.6229; p-MeC_6H_4, Cl, 54.5, 125-7/1, 1.6120; $4FC_6H_4$, Cl, 72.2, 95-7/0.5, 1.6028; Ph, Br, 61, 127-130/2, 1.6850; 4-FC_6H_4, Br, 55, 135-8/1, 1.6758; $PhCH_2$, Cl, 76.4, 120-3/2, 1.6150; 3-FC_6H_4, Cl, 108-110/1.5, 1.5908; 4-$MeC_6H_4CH_2$, Cl, 53.3, 126-9/2, 1.6035; 4-$ClC_6H_4CH_2$, Cl, 61.6, 129-133.2, m. p. 74-6°, --; 2-$FC_6H_4CH_2$, Cl, 61.6, 129-133.2, m. p. 48-9°, --; 2.4-$Me_2C_6H_3CH_2$, Cl, 47.5, 140-1.6045; 2.4-$Cl_2C_6H_3CH_2$, Cl, 43.4, 147-9/2, m. p. 100-1°, --. Also produced were II (X=Cl, A=CH_2CH_2), yield 61.5%, m. p. 92-3°. I and II are intermediate products for the production of insecticides, acarocides, fungicides and herbicides.

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UDC 632.95

USSR

BLIZNYUK, N. K., KHOKHLOV, P. S., KVASHA, Z. N., MARKOVA, L. I., LEVSKAYA, G. S., PROTASOVA, L. D., SOLNTSEVA, L. M., MATYUKHINA, Ye. N., VARSHAVSKIY, S. A., BARANOV, Yu. I., LIBMAN, B. Ya., ZHEMCHUZHIN, S. G.

"Method of Production of Dichlorides or Dibromides of Thiophosphonic Acids or Their Bis Analog"

USSR Author's Certificate No 332095, filed 19/08/69, published 17/04/72 (Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N591, by T. A. Belyayeva)

Translation: Compounds of the formula $RP(X)X_2$ (I) (R=alkyl, aryl, aralkyl; X=Cl or Br) and $X_2P(S)A(S)PX_2$ (II) (A-bivalent hydrocarbon radical) were produced by the reaction of mono- or dihalo hydrocarbons with S, P and PX_3 with heating to 250-400° in an autoclave of stainless steel or nickel in the presence of catalytic quantities of I_2 or its compounds. Example. A mixture of 0.24 mole PhCl, 0.24 g-atom S, 0.16 g-atom white P, 35 ml PCl_3 and 0.05 g I_2 is heated at 290-330° for seven hours in an autoclave of stainless steel, the PCl_3 is distilled, then vacuum distillation is used to separate I (R=Ph, X=Cl), yield 60%, B. T. 109-112°/3, $n^{20}D$ 1.6241. Similarly, I were produced (given R, X, yield in %, B. P. in °C/mm, $n^{20}D$): 4-ClC_6H_4,

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USSR

BARANOV, Yu. M.

"Fractional-Cycle Codes with Majority Decoding"

Tr. Ucheb. In-tov Svyazi. M-vo Svyazi SSSR [Works of Teaching Institutes of Communications. Ministry of Communications, USSR], 1972, No 59, pp 16-21 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V479, by V. Dyn'kin).

Translation: A fractional cycle code (FC code) refers to a linear code for which simultaneous cyclical permutations of certain groups of symbols into which the code word is divided leads to words of the same code. In a systematic FC code, one of the groups consists completely of information symbols, and all of the information symbols are included in this group. FC codes with majority decoding are constructed, and only seperated checks are analyzed. Particular attention is given to checks with not over three components. The characteristics of certain codes with distances near or equal to the maximum values with fixed length and number of information symbols are presented.

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USSR

UDC: 621.39.414

FINK, L. M., BARANOV, Yu. M.

"On Optimality of Some Short Codes"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 1 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 1), Leningrad, 1971, pp 59-73 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A46)

Translation: Certain general limitations are set on code spacing for optimum codes. Proof is given of the optimality of a number of specific short codes. A list of some optimum codes is presented. The results are discussed. Resumé.

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USSR UDC: 621.394.14

BARANOV, Yu. M.

"Decoding in the Order of Decreasing Reliabilities"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 1 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 1), Leningrad, 1971, pp 73-77 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A41)

Translation: A new method of analog decoding is proposed for block codes which permit majority decoding, and it is shown that this method ensures reliability of the received information which is very close to the reliability of reception on the whole. Resumé.

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USSR

LEVITIN, Ye. I., SEREBRYANIK, Ye. B., ZAYDEL', I. N., SHEKHMEYSTER, Ye. I., KUZIN, N. I., OSOKIN, G. V., BARANOVA, G. M.

"Method of Production of Photoelectron Devices"

USSR Author's Certificate No 274247, filed 13 Nov 67, published 24 Sep 70 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5A185P)

Translation: A method is patented for production of a photoelectron device with a multialkaline photocathode. Maximum sensitivity is assured by inclusion of multiple heatings in the process of producing the photoelectron device. Sensitizing of the photocathode by oxygen is performed after each heating. The operations are repeated until a steady value of the sensitivity of the photocathode is obtained. T. F.

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Acc. Nr.: AP0046492 Ref. Code: 7/RO115

USSR UDC 532.507.089

BARANOVA, O. B., and TROKHAN, A. M.

"Analysis of Errors in Measurement of Turbulence by an Optical Method"

Moscow, Izmeritel'naya Tekhnika (Measurement Technology), No 1, 1970, pp 20-23

Translation: The possible sources of errors in the transit time optical photoelectric recording method are presented, the errors are analyzed and two limiting cases of the optical scheme with an evaluation of the sensitivity of photoelectric recording are discussed. Relations were obtained of the effect of inertia of the particles on measurement results under different ripple frequency rates and different particle sizes. (3 figures, 7 biblio. ref.)

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UDC: 616.831-073.97

ORLOV, Ye. F., BARANOVA, I. A., RAKOV, I. S., and RODINA, I. V.,
Scientific Research Radiophysics Institute, Gor'kiy

"A Method of Investigating the Spatial Dependence of the Spectral Components of Electroencephalograms"

Moscow, Meditsinskaya tekhnika, No 1, 1973, pp 10-13

Abstract: Since the problem of parallel spectral analysis of electroencephalograms (EEG) for a large number of channels with measurement of phase differences in individual spectral components after narrow-band filtration is an interesting one, this paper proposes a device for solving the problem. Optical analog systems of this type have the advantage of operational speed in addition to multichannel application, and are thus especially useful for EEG analysis. In the final stage of this equipment, a schematic of which is shown, the results of the multichannel Fourier analysis is shown on the screen of a television kinescope with frequency measured along the x axis and the channel number along the y. The equipment is explained, and the mathematical analysis for a single channel given. A sample of eight-channel EEG spectra obtained with the device is shown.

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Acc. Nr: AP0049766 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: 4R 0191

B

101291n **Effect of the molecular-weight distribution of suspension poly(vinyl chloride) on the technological properties of rigid compositions.** Manushin, V. I.; Balashova, T. S.; Baranova, L. G.; Isakova, V. A.; Zhikharevich, L. B. (USSR). *Plast. Massy* 1970, (1), 26-9 (Russ). The effects of the mol. wt. distribution of suspension poly(vinyl chloride) (I) (3 imported and 2 Soviet brands) on its extrudability were studied. The processability of rigid I compns. was evaluated from the melt index and the behavior of I during processing. Differential mol. wt. distribution curves indicated that I processability could not be properly evaluated from Finketscher const., but also required an evaluation of mol. wt. distribution. Fractional compn. of I and its statistical distribution width indicated a relation between the melt index and the heterogeneity factor (U) characterizing the statistical distribution width of I. Two regression equations were derived by statistical treatment of U and the melt index. The equations indicated that I extrudability could be quant. evaluated from U. CKJR

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19801684

USSR UDC 632.95

SHOGAM, S. M., STONOV, L. D., TROITSKAYA, T. V., PARSHUTIN, S. M., and BARANOVA, L. N.

"Granulated Herbicides for Control of Overgrowth on Reclamation and Drainage Ditches"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works,), vyp 1, Moscow, 1970, pp 216-224 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N532 by T. A. Belyayeva)

Translation: Formulas and a technique have been devised for the preparation of granulated herbicides (monuron, diuron, atrazine, simazine) having any prescribed resistance to elution by water, and hence carrying effective lives, as well as any prescribed particle-size range. A procedure has been devised for determining resistance to elution by water by comparison with a sample of a granulated preparation of the same herbicide taken as a standard. The highest herbicidal activity is provided by preemergence application or by application during the growing period. Under rapid water-flow conditions, granulated diuron preparations that have been dried at 90° or subjected to prolonged drying at 60-70° are recommended.

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